

Notice of Allowability

Application No.

09/940,795

Examiner

Zachary A. Davis

Applicant(s)

HAMID, LARRY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to The Request for Continued Examination received 14 February 2006.
2. ☒ The allowed claim(s) is/are 1,2,4,5 and 7-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 February 2006 has been entered.
2. By the above submission, Claims 1, 2, 4, 5, 7, 10, and 14 have been amended. No claims have been added or canceled. Claims 1, 2, 4, 5, and 7-18 are currently pending in the present application.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Dunnam on 24 April 2006.

The application has been amended as follows:

IN THE CLAIMS:

Please **REPLACE Claims 1, 7, 10, and 14** with the following amended claims.

1. A method for providing access to a secure entity or service by M designated persons having only limited access privileges, comprising:

storing biometric data in dependence upon a biometric characteristic of each of the M designated persons;

capturing biometric information representative of a biometric characteristic of each of N persons and providing biometric data in dependence thereupon, with $1 < N < M$ being a subset of a plurality of predetermined subsets of the M designated persons, wherein at least two of the predetermined subsets of the plurality of predetermined subsets of the M designated persons have different access privileges, once authenticated, to the secure entity or service;

comparing the captured biometric data of each of the N persons of the subset with the stored biometric data to produce N comparison results; and,

if the N comparison results are indicative of the N persons of the subset each being one of the M designated persons and thereby forming the subset of the N persons, determining the access privileges to the secure entity or service in dependence upon the subset of the N persons.

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7. A method for providing access to a secure entity or service by M designated persons having only limited access privileges, comprising:

providing each designated person of the M designated persons with a portable biometric device operable to capture biometric information presented thereto;

assigning a biometric characteristic of each of the M designated persons to a respective portable biometric device and storing biometric data in the respective portable biometric device in dependence upon the biometric characteristic;

capturing biometric information representative of a biometric characteristic of each of N persons in response to each of the N persons presenting said information to the respective portable biometric device and providing biometric data in dependence thereupon, with $1 < N < M$ being a subset of a plurality of predetermined subsets of the M designated persons, wherein at least two of the subsets of the plurality of predetermined subsets have different access privileges, once authenticated, to the secure entity or service;

comparing the captured biometric data with biometric data stored in each of the respective portable biometric devices to produce a comparison result and, in dependence thereon, performing one of transmitting an authorization signal from said portable biometric device to a receiving port of the secure entity or service and other than transmitting an authorization signal from said portable biometric device; and,

determining the access privileges to the secure entity or service in dependence upon the authorization signals received from the respective portable biometric devices of the subset of N persons.

10. A method for providing access to a secure entity or service by M designated persons having only limited access privileges, comprising:

storing biometric data in dependence upon a biometric characteristic of each of the M designated persons in at least a portable biometric device;

capturing biometric information representative of a biometric characteristic of each of N persons in response to each of the N persons presenting said information to one of the at least a portable biometric device and providing biometric data in dependence thereupon, with $1 < N < M$ being a subset of a plurality of predetermined subsets of the M designated persons, wherein at least two of the subsets of the plurality of predetermined subsets have different access privileges, once authenticated, to the secure entity or service;

comparing the captured biometric data of each of the N persons of the subset with the stored biometric data to produce N comparison results;

if each of X comparison results is indicative of one of the N persons being one of the M designated persons, transmitting an authorization signal from the at least a portable biometric device to a receiving port of the secure entity or service, where $1 < X \leq N$; and,

determining the access privileges to the secure entity or service in dependence upon the authorization signals of the subset of X persons received from the at least a portable biometric device.

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14. A security system for securing an entity or a service from indiscriminate access and for providing access to a subset of N persons of M designated persons₁ comprising:

at least a portable biometric device, the device comprising:

a biometric sensor for capturing biometric information representative of a biometric characteristic in response to a person presenting said information to the biometric sensor;

an encoder for digitally encoding the captured biometric information and providing biometric data in dependence thereupon;

memory for storing biometric data of at least one of the M designated persons;

a processor for comparing the captured biometric data with stored biometric data of a designated person to produce a comparison result₁ and, if the comparison result is indicative of a match₁, for providing an authorization signal; and,

a transmitter for transmitting the authorization signal;

at least a port for receiving authorization signals of the subset of $1 < N < M$ persons from the at least a portable biometric device; and,

a processor for determining access privileges to the secured entity or service in dependence upon the authorization signals of the subset of $1 < N < M$ persons with the subset of $1 < N < M$ persons persons being a subset of a plurality of predetermined subsets of the M designated persons, wherein at least two of the subsets of the plurality of predetermined subsets have different access privileges, once authenticated, to the secure entity or service.

Allowable Subject Matter

4. Claims 1, 2, 4, 5, and 7-18 are allowed.
5. The following is an examiner's statement of reasons for allowance:

Each of the independent claims is directed to methods and systems that authenticate a subset of a larger group of designated individuals. Authentication is performed using biometric characteristics of the individuals, up to a threshold N , where $N < M$, M being the total number of designated individuals. The closest prior art, Matyas, Jr. et al, US Patent 6697947, is also directed to a threshold authentication scheme using biometric authentication of the individuals. The independent claims, by the amendment above, now also recite that different predetermined subsets have different access privileges once they are authenticated. Although Schneier, *Applied Cryptography*, discloses that threshold schemes can be used to model any sharing scheme in terms of which groups in what distributions can gain access to be authenticated, neither Schneier nor Matyas, alone or in combination, teaches nor suggests that the groups (or subsets) can have different access privileges within the entity or system once a group has been authenticated, as noted by Applicant in the present response (see pages 9-10).

The Examiner notes that Sandhu, "Transaction Control Expressions for Separation of Duties", describes situations in which it would be desirable for individuals in different roles to have different privileges for performing actions or other access;

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however, Sandhu is generally concerned with individuals in particular roles, and not with groups or subsets.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary A. Davis whose telephone number is (571) 272-3870. The examiner can normally be reached on weekdays 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER